APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/410,367	09/30/1999	JEFFREY D. SAFFER	01413.0009	6759

22852   7590   01/27/2003

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EXAMINER
DASTOURI, MEHRDAD

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 01/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/410,367	SAFFER ET AL.
	Examiner	**Art Unit**
	Mehrdad Dastouri	2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _31 October 2002_ .

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-17 and 19-64_ is/are pending in the application.

  4a) Of the above claim(s) _20-62_ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-17,19,63 and 64_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

  If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a) ☐ All b) ☐ Some * c) ☐ None of:

    1. ☐ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

  a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _5, 5/6_ .	6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1.   Applicants' amendment filed October 31, 2002, has been entered and made of record.

2.   Objection to Claims 5 and 16-18 has been withdrawn in view of applicants' amendment.

3.   35 USC 112 rejection of Claims 8 and 14 have been withdrawn in view of Applicants' amendment.

4.   Applicants' arguments regarding Claims 1-17 and 19 have been fully considered but they are not persuasive.

Regarding Claim 1, Applicants argue in essence that a *prima facie* of anticipation has not been provided, and prior art of record (Fayyad et al) do not teach "selecting a set of attributes associated with an object, wherein the attributes selected comprise a plurality of data type [selection] selected from [the] a group consisting of [any of the] a text data type, a numerical data type, a categorical data type, [or] and a sequence data [types] type".

The examiner disagrees and indicates that Fayyad et al teachings definitely anticipate the original Claim 1 limitations. Surprisingly, Applicants are arguing a *prima facie* of anticipation has not been provided while referring to the new limitations of the amended Claim 1, which do not exist in the original Claim 1 prior to amendment. It is, however, respectfully submitted that Fayyad et al teachings furthermore anticipates the amended Claim1 and Claim 2 limitations as well.   Claim 1 language broadly recites attributes associated with an object. In Fayyad et al invention, the object is a data

structure that has many attributes as depicted in Figures 6A-6D and 8, as well as

Tables 1 and 2. For example, data structure RS shown in Table 1 is comprised of

categorical data type (Age, Income, Children and Cars) as well as numerical data type

(the numerical values in each category). Similarly, Fayyad et al teachings anticipate

Claim 2 broad language concerning "defining a uniform data structure for representing

objects of different data type" as depicted in Table 1. Data types "Age', "Income",

"Children" and "Cars" are category data type as well as numerical data type. Claim

language does not recite any restriction necessitating a data type should not be

classified in two or more different classes.

Since, Fayyad et al disclose Claims 1 and 2 limitations, there is no requirement

that secondary prior arts of record teach the same limitations all over again.

Consequently, teachings of Strasnick and J.C. Roberts adequately disclose further

limitations of Claims 2-15 and 19.

Regarding Claim 16, it is submitted that J.C. Roberts disclose "displaying first

graphical results of a first type analysis performed on selected attributes of a first data

set" and "displaying second graphical results of a second type analysis performed on

selected attributes of a second data set" as depicted in Figure 7 for 'multiple viewing

visualization".

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-3, 6, 8, 14 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Fayyad et al (U.S. 6,374,251).

Regarding Claim 1, Fayyad et al disclose a method for analyzing data for different data types, comprising:

selecting a set of attributes associated with an object, wherein the attributes selected comprise a plurality of data types selected from a group consisting of a text data type, a numerical data type, a categorical data type, and a sequence data type (Column 5, Lines 40-51; Figures 6A-6D and 8, as well as Tables 1 and 2. Data structure RS shown in Table 1 is comprised of categorical data type (Age, Income, Children and Cars) as well as numerical data types (the numerical values in each category));

transforming the selected attributes into n-dimensional vectors (Figure 6A-6D; Column 8, Lines 15-63; Table 1);

applying transformation operations to the selected attributes (Column 8, Lines 65-67, Column 9, Lines 1-55; Table 2. K-means clustering will be applied to the n-dimensional (n is the number of attributes) data structure.);

indexing the n-dimensional vector, certain attributes, and a result of the transformation operations (Column 17, Lines 25-30); and

displaying a representation of the object based on the selected attributes

(Figures 10-14; Column 14, Lines 14-50).

Regarding Claim 2, Fayyad et al disclose a computer-implemented method of

analyzing various data types, comprising the steps of:

defining a uniform data structure for representing objects of different

data types (Figures 6A-6D; Column 8, Lines 15-64);

segmenting certain attributes of a plurality of different objects of different data

types into elements that are representable in said uniform data structure (Column 8,

Lines 65-67, Column 9, Lines 1-55; Table 2. K-means clustering (segmentation) will be

applied to the n-dimensional (n is the number of attributes) data structure.); and

operating on said certain attributes to produce at least one representation of said

objects based on said uniform data structure (Figures 10-14; Column 14, Lines 14-50).

Regarding Claim 3, Fayyad et al further disclose the method of Claim 2 wherein

said plurality of different data types comprises a combination of any two of numeric,

sequence string, categorical, or text data types (Column 5, Lines 20-25. Data types

comprise a combination of numeric and categorical data.).

Regarding Claim 6, Fayyad et al further disclose the method of Claim 2 wherein

said step of operating on said selected attributes produces a vector representation of

said objects in correspondence with said uniform data structure (Figure 6A-6D; Column

8, Lines 15-63; Table 1).

Regarding Claim 8, as best understood by the Examiner, Fayyad et al disclose

the method of claim 6 wherein the data representations are vector representations

(Figure 6A-6D; Column 8, Lines 15-63; Table 1).

Regarding Claim 14, Fayyad et al further disclose the method of Claim 2 further

comprising using said representation to identify cluster groups of related objects (Figure

10, Cluster information 312, 316 and 320).

Regarding Claim 15, Fayyad et al further disclose the method of Claim 2 further

comprising creating two-dimensional projections of cluster groups for two dimensional

visualizations (Figure 10, Cluster information 312, 316 and 320; Cluster ID 312).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Fayyad et al in view of Strasnick et al (U.S. 5,671,381).

Regarding Claim 4, Fayyad et al do not explicitly disclose the method of Claim 3

wherein said plurality of different data types comprise a combination of any three of

numeric, reference string, categorical, and text data types.

Strasnick et al disclose a method for visualization of different data types

comprising a combination of numeric, reference string, categorical, in text data types

(Figures 2A, 10A, 10B and 11; Column 6, Lines 34-67, Column 7, Lines 1-8; Column 20,

Lines 34-48. The visualized data types in Figures 2A and 10B comprise a combination

of numeric, reference string, categorical, and text data types.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Fayyad et al invention according to the teachings of Strasnick et al to provide visualization of different data types comprising a combination of numeric, reference string, categorical, in text data types because it will expand versatility of visualization system and improve research decision making.

Regarding Claim 5, Fayyad et al do not explicitly disclose the method of Claim 4 wherein said data types comprise numeric, sequence string, categorical and text data types.

Strasnick et al disclose a method for visualization of different data types comprising a combination a combination of a numeric data type, a sequence string data type, a categorical data type and a text data type (Figures 2A, 10A, 10B and 11; Column 6, Lines 34-67, Column 7, Lines 1-8; Column 20, Lines 34-48. The visualized data types in Figures 2A and 10B comprise a combination of numeric, sequence string, categorical, and text data types.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Fayyad et al invention according to the teachings of Strasnick et al to provide visualization of different data types comprising a combination of numeric, sequence string, categorical and text data types because it will expand versatility of visualization system and result in making enhanced research decisions.

9.   Claims 7, 9-11,16, 17, 19, 63 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fayyad et al in view of J.C. Roberts (IEEE Paper; On Encouraging Multiple Vies for Visualization).

Regarding Claim 7, Fayyad et al do not explicitly disclose the method of Claim 2 further comprising producing an index that includes second representations of non-selected attributes of a particular object and associating the non-selected attributes with a particular representation of said first representations.

Roberts discloses a system for multiple views visualization comprising producing an index that includes second representations of non-selected attributes of a particular object and associating the non-selected attributes with a particular representation of the first representations (Figures 2-4 and 7A-E; Sections 3.1 and 4. Figures 7B, 7C and 7D visualize the surface image features of the block of material, feature sets of different pressures in the block and different pressure sets, respectively, associated to each other.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Fayyad et al invention according to the teachings of J.C. Roberts to produce an index that includes second representations of non-selected attributes of a particular object and associating the non-selected attributes with a particular representation of the first representations because it will improve analyzing the features of different data by expanding sampling of the data population.

Regarding Claim 9, J.C. Roberts further disclose the method of Claim 2 further comprising using a first set of selected attributes associated with a first set of objects to determine the relationships among the first set of objects of a particular data type and using non selected attributes associated with the first set of selected attributes to correlate objects represented by the first set of selected attributes with a second set of objects represented by a second set of selected attributes (Figures 2-4 and 7A-E;

Sections 3.1 and 4. Figures 7B, 7C and 7D visualize the surface image features of the block of material, feature sets of different pressures in the block and different pressure sets, respectively, associated to each other. Furthermore, feature sets of different pressures in the block depicted in Figure 7C will be correlated with the result of pressure feature sets in the air (second object).).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Fayyad et al invention according to the teachings of J.C. Roberts to implement further limitations of Claim 9 because it will improve analyzing the features of different data by expanding sampling of the data population.

Regarding Claim 10, J.C. Roberts further disclose the method of Claim 9 further comprising identifying, using said non selected attributes, at least one object of said second set of objects that corresponds to a selected object or objects of said first set of objects (Figures 5, 6 and 7A-7E)-.

Regarding Claim 11, J.C. Roberts further disclose the method of Claim 10 further comprising displaying said first and second set of objects in first and second windows on a display screen and highlighting said second set of objects that corresponds to said selected object or objects (Figures 5 and 7C. Figure 7C depict the stationary block of material and the air are displayed and highlighted in different windows.

With regards to Claim 16, arguments analogous to those presented for Claims 2 and 9 are applicable to Claim 16. J.C. Roberts further disclose "displaying first graphical results of a first type analysis performed on selected attributes of a first data set" and "displaying second graphical results of a second type analysis performed on

selected attributes of a second data set" as depicted in Figure 7 and Section 4 for

'multiple viewing visualization".

Regarding Claim 17, J.C. Roberts further disclose the method of Claim 16

wherein said step of highlighting is based on attributes not used for creating said first

graphical results (Figures 7C and 7D).

With regards to Claim 19, arguments analogous to those presented for Claims 2,

6 and 9 are applicable to Claim 19.

With regards to Claims 63 and 64, arguments analogous to those presented for

Claim 16 are applicable to Claims 63 and 64.

10.   Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Fayyad et al in view of Magdi Mohamed et al (IEEE Pattern Analysis and Machine

Intelligence; Handwritten Word Recognition Using Segmentation-Free Hidden Markov

Model and Segmentation-Based Dynamic Programming Techniques).

Regarding Claim 12, Fayyad et al do not explicitly disclose the method of Claim 2

wherein said step of segmenting comprises creating a plurality of said elements from a

sequence of string sequence data.

Magdi Mohamed et al disclose a handwritten word recognition using

segmentation based Dynamic Programming wherein the step of segmentation

comprises creating a plurality of elements from a sequence of string sequence data

(Pages 8 and 9, Sections IIIA and IIIB, Segmentation and Dynamic Programming

matching; Figure 5).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to modify Fayyad et al invention according to the teachings of

Magdi Mohamed et al to consider a step of segmenting comprises of creating a plurality

of elements from a sequence of string sequence data because it will provide an

advanced analyzing system and improve capability of the recognition system to achieve

significantly better performance.

Regarding Claim 13, Magdi Mohamed et al further disclose the method of Claim

12 wherein said step of segmenting comprises selecting words of a text document that

meet certain preselected criteria (Pages 8 and 9, Sections IIIA and IIIB, Segmentation

and Dynamic Programming matching; Figure 5).

Conclusion

11.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Contact Information

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mehrdad Dastouri whose telephone number is (703)

305-2438.   The examiner can normally be reached on Monday to Friday from 8:00 a.m.

to 4:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Amelia Au can be reached on (703) 308-6604.

The fax phone numbers for the organization where this application or proceeding

is assigned are (703) 872-9314 for regular and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the T.C. Customer Service Office whose telephone

number is (703) 306-0377.

Mehrdad Dastouri
Patent Examiner
Group Art Unit 2623
January 27, 2003